

1 What is claimed is:

2 **CLAIMS**

3 1. A method for transmitting data packets over a network to selected multiple remote
4 destinations, the method comprising the steps of:

5 embedding in a first data packet a list of multiple remote destination
6 addresses corresponding to each of the selected multiple remote destinations;

7 providing an addressing protocol by which networking elements are
8 capable of accessing the list of multiple remote destination addresses; and

9 instructing networking elements to transmit a copy of the first data packet
10 to each of the selected multiple remote destinations corresponding to each of the
11 addresses in the list of multiple remote destination addresses.

12 2. The method of claim 1, further comprising using the network elements to transmit
13 the data packets without having the data packets travel over any segment of the network
14 more than once.

15 3. The method of claim 2, further comprising transmitting the data packets to the
16 selected multiple remote destinations without using a subscription service to initiate
17 delivery of the data packets.

18 4. The method of claim 1 wherein the embedding step comprises using
19 internetworking protocol (IP) data packets.

20 5. The method of claim 1 further comprising including network storage devices in
21 the list of selected multiple remote destinations.

22 6. The method of claim 1 wherein the instructing step further comprises:

23 instructing network switches or routers receiving the first data packet to
24 copy the first data packet into one or more second data packets, wherein copying
25 the first data packet comprises:

26 creating one or more second data packet copies of the received first
27 data packet;

28 zeroing out each IP address in the list of selected multiple remote
29 destinations that is not directly accessible beyond the network switch or
30 router receiving the first data packet; and

1 setting a destination IP address field in each second data packet to
2 one of the non-zeroed IP addresses in the list of selected multiple remote
3 destinations in the second data packet; and
4 transmitting the one or more second data packets to the directly accessible
5 remote destination or network element indicated for each non-zeroed IP address in
6 the list of selected multiple remote destinations embedded in the one or more
7 second data packets.

8 7. A system for transmitting data packets over a network to selected multiple remote
9 destinations, the system comprising:

10 a directly addressed multicast protocol (DAMP) client;

11 a network infrastructure;

12 multiple network devices remotely located from the DAMP client and the
13 network infrastructure; and

14 data packets for carrying data between the DAMP client and the multiple
15 network devices.

16 8. The system of claim 7 wherein the data packets do not travel over any segment of
17 the network more than once.

18 9. The system of claim 8 wherein the selected multiple remote destinations do not
19 initiate delivery of the data packets through a subscription service.

20 10. The system of claim 7 wherein the network infrastructure further comprises
21 network switches and routers.

22 11. The system of claim 7 wherein the data packets comprise internetworking
23 protocol (IP) data packets.

24 12. The system of claim 7 wherein the multiple network devices include network
25 storage devices.

26 13. A computer readable medium on which is embedded a program, the program
27 comprising modules that execute a method for transmitting data packets over a network to
28 selected multiple remote destinations, the method comprising the steps of:

29 embedding in a first data packet a list of multiple remote destination
30 addresses corresponding to each of the selected multiple remote destinations;

1 providing an addressing protocol by which networking elements are
2 capable of accessing the list of multiple remote destination addresses; and
3 instructing networking elements to transmit a copy of the first data packet
4 to each of the selected multiple remote destinations corresponding to each of the
5 addresses in the list of multiple remote destination addresses.

6 14. The computer readable medium of claim 13, further comprising using the network
7 elements to transmit the data packets without having the data packets travel over any
8 segment of the network more than once.

9 15. The computer readable medium of claim 14, further comprising transmitting the
10 data packets to the selected multiple remote destinations without using a subscription
11 service to initiate delivery of the data packets.

12 16. The computer readable medium of claim 13 wherein the embedding step
13 comprises using internetworking protocol (IP) data packets.

14 17. The computer readable medium of claim 13, further comprising including network
15 storage devices in the list of selected multiple remote destinations.

16 18. The computer readable medium of claim 13 wherein the instructing step further
17 comprises:

18 instructing network switches or routers receiving the first data packet to
19 copy the first data packet into one or more second data packets, wherein copying
20 the first data packet comprises:

21 creating one or more second data packet copies of the received first
22 data packet;

23 zeroing out each IP address in the list of selected multiple remote
24 destinations that is not directly accessible beyond the network switch or
25 router receiving the first data packet; and

26 setting a destination IP address field in each second data packet to
27 one of the non-zeroed IP addresses in the list of selected multiple remote
28 destinations in the second data packet; and

29 transmitting the one or more second data packets to the directly accessible remote
30 destination or network element indicated for each non-zeroed IP address in the list

- 1 of selected multiple remote destinations embedded in the one or more second data
- 2 packets.

11/11/2019 10:00 AM